REMARKS

I. Status Summary

In this amendment, claim 13 is canceled, and claims 31-37 are added. Therefore, upon entry of this amendment, claims 1-12 and 14-37 will be pending.

II. Telephone Conference with Examiner

On June 6, 2005, Applicants' representative discussed the proposed claim amendments and Clarke and Dao with the Examiner. In the telephone conversation, it was agreed that the amendments would be entered upon filing of a request for continued examination. It was also agreed that the claim amendments distinguished over Clarke and Dao and that a new search would be performed. The Examiner further agreed to call Applicants' representative if the results of the search required any further claim amendments and that such amendments could possibly be made by an Examiner's amendment.

III. Claim Rejections – 35 U.S.C. § 103

Claims 1-30 were rejected under 35 U.S.C. § 103 as unpatentable under U.S. Patent No. 5,550,914 to Clarke et al. (hereinafter, "Clarke") in view of Dao et al., "Configurable Flow Control Mechanism for Fault Tolerant Routing," (May 1995), ACM Sigarch Computer Architectural News, Vol. 23, Issue 2 (hereinafter, "Dao"). This rejection is respectfully traversed.

Independent claims 1, 7, 12, 16, 18, 24, and 26 have been amended to recite that ticket voucher grant messages are issued in response to ticket voucher request messages at a rate based on available bandwidth of an outbound signaling link. As discussed in the background section of Applicants' specification, when a signaling link fails, the linkset is placed on-hold, and messages destined for the on-hold linkset are queued. When the signaling link becomes available, the queued messages in addition to newly received messages must be routed to the outbound signaling link. The outbound signaling link can become overwhelmed, especially when the outbound signaling link is a low speed signaling link and the inbound signaling link is a high speed signaling link. Accordingly, in order to control the flow of messages between inbound and outbound signaling links, each of the independent claims have been amended to recite that ticket voucher grants are issued at a rate based on available bandwidth on the outbound signaling link. By issuing grants at a rate based on available bandwidth of the outbound signaling links, the likelihood that the outbound card will be overwhelmed is reduced. Support for this amendment appears, for example, on page 15, line 17 through page 16, line 25 of the present specification.

There is absolutely no teaching or suggestion in Clarke or Dao of a system for controlling the flow of signaling messages between processing modules in a signaling node where ticket voucher requests are issued by communication modules and grants are issued at a rate based on an available bandwidth of the outbound signaling link. Clarke is directed to inline message interceptors **52** that reside outside of the signaling node either to prevent messages from being sent to an end node or to modify

messages that are sent to the end node. For example, Figure 5 of Clarke discloses a first form of interceptor **52** that suppresses messages in one direction along the link based on selection criteria. The selection criteria described in Clarke include the identity of the signaling point that sent a message, the identity of the destination, the identity of the communication initiator, or the type of data being sent. (See column 8 lines 56-64 of Clarke.) This portion of Clarke indicates that messages are suppressed based on stored criteria. There is absolutely no teaching or suggestion of sending ticket voucher request messages or issuing ticket voucher grant messages at a rate based on an available bandwidth of an outbound signaling link.

Figure 6 of Clarke shows a second form of message interceptor **52** where messages are modified before being transmitted to their destination. There are no ticket voucher request or grant messages exchanged between any of the components in Figure 6. The messages are simply modified based on stored criteria.

Figure 7 of Clarke illustrates a third form of message interceptor **52** where messages are selectively modified and/or suppressed. There is absolutely no teaching or suggestion of sending ticket voucher request messages or issuing grant messages at a rate based on an available bandwidth of an outbound signaling link.

The remainder of Clarke is directed to dealing with problems if one of the signaling link portions that connect a message interceptor to the signaling nodes fails. For example, Clarke states that if the outbound link from a message inteceptor fails before the message interceptor can send a received message to the destination, the message interceptor may return the message back to the originating signaling point.

(See column 12, lines 4 through 22 of Clarke.) There is absolutely no teaching or suggestion of issuing ticket voucher request messages or of issuing ticket voucher grant messages at a rate based on an available bandwidth of an outbound signaling link.

Dao likewise fails to teach or suggest issuing ticket voucher request or grant messages at a rate based on an available bandwidth of an outbound signaling link. Dao is directed to a configurable flow control mechanism for fault tolerant rounting in which messages are divided into flow control digits or flits. A flit is defined as the smallest unit on which flow control is performed and represents the smallest unit in a pipeline network. (See section 2.1 of Dao.) The flow control methodology disclosed in Dao is referred to as "scouting" where a header flit of message is sent across a network. When a header flit crosses a link in a path between the source and the destination, a positive acknowledgement flit is returned along the path to the source. When the number of acknowledgments received is equal to a predetermined scouting distance, i.e., when the header is certain number of links in the path away from the source, the data flits are sent. Once data transmission starts, the data transmission does not stop until all the data has reached the destination. (See section 2.2 of Dao.) Thus, Dao discloses a path scouting mechanism in which the number of header flits that can be sent is controlled by the distance by which a header successfully advances in the network. Once the scouting distance is achieved, the remainder of the message is sent without any flow control.

There is absolutely no teaching or suggestion in Dao of issuing ticket voucher flow control messages at a source communication module or issuing grants in response

to the ticket voucher flow control messages where the grants are issued at a rate corresponding to an available bandwidth of an outbound signaling link. According to the flow control mechanism Dao, part of a path is tested before the remainder of a message is sent over a path. The primary concern is reliability. The goal of Dao is to test a portion of the path, and if that portion is available, the entire path is assumed to be available and the message is sent over the path without further flow control. There is no mention in Dao of controlling the transmission rate, not to mention controlling the rate based on available signaling link bandwidth during the scouting period or during the post-scouting period. As stated above, during the scouting period, the number of header flits, rather than the rate, is controlled based on the scouting distance. After the scouting distance is achieved, the remainder of the message is sent without flow control. In contrast, according to the subject matter of the independent claims of the present application, the transmission rate between a sending communication module and a receiving communication module is controlled by a ticket voucher grant messages that are issued based on an available bandwidth of an outbound signaling link. Thus, for these reasons, it is respectively requested that the rejection of the claims as unpatentable over Clarke in view of Dao be withdrawn.

On page 10 of the Official Action, it is indicated that column 5, lines 30 through 41 and column 13, lines 30-52 of Clarke teach or suggest issuing ticket voucher grant messages at a rate based on outbound signaling link capacity. Applicants respectively disagree. Column 5, lines 30-41 of Clarke state as follows:

> Referring to FIG. 1, an SS7 network **10** is shown inter-communicating three signaling end points constituted by two service switching points SSPs **11** (between which pass speech circuits **12** of a transmission network not further illustrated) and a service control point SCP **13** that can control the operation of the SSPs to provide special services. The SS7 network **10** includes two pairs **14** of signaling transfer points STPs, and a plurality of link sets **18** interconnecting the SSPs, SCP and STPs into a redundant network. Each signaling link set **18** is made up of one or more individual signaling links, the number of signaling links in a link set being chosen to provide appropriate capacity for the level of signaling traffic expected. The redundancy provided in respect of the STPs and links is to ensure that the failure of a single component of the network core does not cause the whole network to fail.

The above quoted passage from Clarke describes the overall configuration of the SS7 network. In particular, SSPs, STPs, and SCPs, and signaling links are described. The passage also indicates that the number of signaling links in a linkset are chosen based on the traffic volume. There is absolutely no teaching or suggestion of issuing ticket voucher grant messages at a rate based on outbound signaling link capacity.

Column 13, lines 30 – 52 of Clarke are as follows:

> FIG. 8 shows the general form of a message interceptor provided with MTP level-3 mechanisms for dealing with link failure. In the FIG. 8 interceptor, the output from the level-2 protocol engines **64**, **65** is fed to MTP level-3 functionality (block **90**), this output including both MSU data and link status information from the protocol engines **64**, **65**. MSU data related to signaling network management and maintenance is identified (Service Indicator value less than 3) and handled entirely within the MTP level-3 block **90**, this data being acted upon if addressed to the message interceptor itself as indicated by a match between the destination point code in the routing label and the signaling point code allotted to (and stored by) the message interceptor. MSU data related to higher levels is passed up to the interception functionality - block **91** for transfer circuit **70** and block **92** for transfer circuit **80**. These blocks **91**, **92** contain the message interception functionality corresponding to that described above

> in relation to the forms of message interceptor shown in FIGS. 5 to 7. Each block **91/92** selectively acts on the data it receives and, where appropriate, then passes data (which may include response data) back to the MTP level-3 block **90** for transmission to the appropriate destination.

The above quoted passage from Clarke describes in general a message interceptor **52** with functionality for handling a link failure. The passage states that MTP level 2 protocol engines send MSU data and link status information to the MTP level 3 functionality. This is a normal SS7 network management function and does not include ticket voucher grant messages that are issued at a rate based on an available bandwidth of an outbound signaling link. The passage further indicates that MTP level 3 block **90** processes messages that are addressed to the signaling point code of the message interceptor. This is also standard functionality of MTP level 3. Finally, the passage states that message interceptors receive MSU data and selectively pass the data back to MTP level 3 block **90** for outbound transmission. As described above, the selective action performed by the message interceptors of Clarke include screening messages based on an analysis of parameters in the message. There is absolutely no teaching or suggestion of issuing ticket voucher grant messages at a rate based on available bandwidth of an outbound signaling link.

Thus, for all of the reasons stated above, it is respectively submitted that the rejection of the claims as unpatentable over Clarke in view of Dao should be withdrawn.

IV. New Claims

New dependent claims 31 – 37 are proposed to be added. New claims 31 – 37 are directed to sending ticket voucher request messages that are separate from the call signaling messages. Support for new claims 31 – 37 is found, for example, in Figure 7 of the present application where a ticket voucher request message is shown. New claims 31-35 are believed to be patentable over Clarke and Dao for the reasons stated above with regard to the corresponding independent claims. That is, Clarke fails to disclose sending any flow control messages between source and destination modules and Dao discloses only sending acknowledgment messages each time a header flit crosses a link. In Dao, the messages being flow controlled are the very messages being sent. In the new claims, the ticketed voucher request messages are separate from the messages being flow controlled. Accordingly, for this additional reason, dependent claims 31-37 are believed to be patentable over Clarke in view of Dao.

CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Office Action.

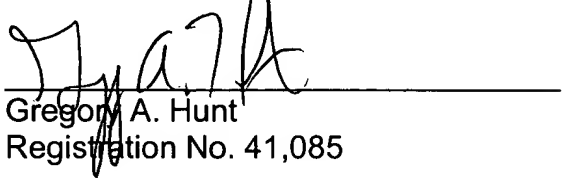
Serial No.: 09/633,970

DEPOSIT ACCOUNT

The Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. **50-0426**.

Respectfully submitted,

JENKINS, WILSON & TAYLOR, P.A.

Date: June 8, 2005 By: 

Gregory A. Hunt
Registration No. 41,085

GAH/wth/sed

Customer No: 25297